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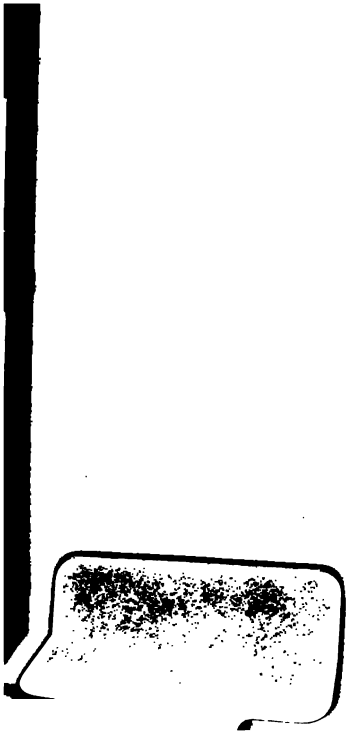
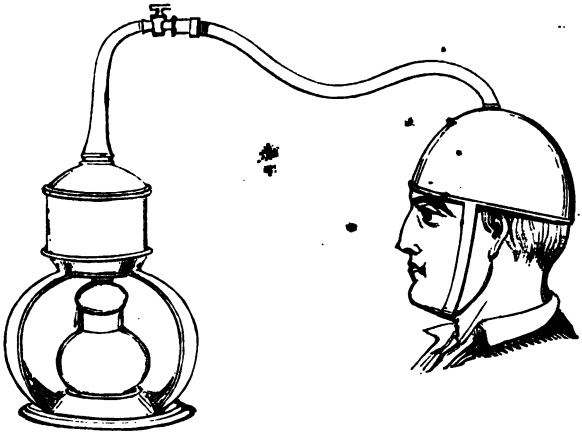
CAZENAVE

ON THE

HUMAN HAIR

Dr BURGESS.





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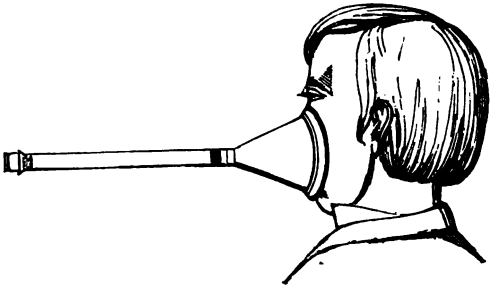

FOR FUMIGATING THE FACE.

DISEASES

OF THE

HUMAN HAIR.

FROM THE FRENCH OF M. CAZENAVE,

PHYSICIAN TO THE HOSPITAL OF ST. LOUIS, PARIS :

WITH A

DESCRIPTION OF AN APPARATUS

FOR

FUMIGATING THE SCALP.

BY

T. H. BURGESS, M.D.,

AUTHOR OF A TREATISE ON THE ERUPTIONS OF THE FACE, HEAD, AND HANDS, &c.

"Turpe pecus mutilum, turpis sine gramine campus,
Et sine fronde frutex, et sine crine caput."

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PREFACE.

DISEASES of the Hair have, until very recently, been abandoned to the care of the empiric and vendor of cosmetics.

Persons altogether ignorant of the anatomy and physiology of the hair, of the organs by which it is secreted, and of the process of its growth, seem to have enjoyed an undisputed right to this branch of medicine; yet why the pathology of so important an appendage of the human frame should be neglected more than that of the epidermis, teeth, and nails, I am at a loss to conceive.

The cause of this neglect may perhaps be attributed to the insufficiency of our knowledge of minute anatomy, previous to the introduction of the microscope, and its application in the study of those delicate tissues

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CHAPTER I.

DESCRIPTION OF AN APPARATUS FOR FUMIGATING THE SCALP IN CERTAIN CHRONIC DISEASES OF THAT REGION INVOLVING THE LOSS OF HAIR.

THE Hair being an appendage of the Skin, and the natural covering of one of the most important parts of the body, its loss and diminution are matters of much interest to the medical practitioner; for these alterations are seldom primary, but rather the result of other diseased conditions. Baldness may be the result of imperfect development of the apparatus which secretes the hair, of atony, or disordered nutrition of those organs, or of complete atrophy, or obliteration of the hair follicles and bulbs, as occurs in the baldness

of old age; with the exception of the latter, those morbid conditions are most commonly the sequelæ of a vicious state of the constitution, inducing at the same time, disease in some other structure or function.*

Baldness may occur at any period of life in the young as well as in the old; it may be limited to a small extent, or extend over the entire scalp; and it occurs much more frequently in men than in women, which, as Grellier remarks, is perhaps partly owing to the smaller quantity of fat beneath the scalp in males than in females; for alopecia is often associated with the general reduction of that substance; in youth from great exhaustion or debility, and in old age from its translation from superficial to internal parts—a natural process which occurs at that period of life. Van Swieten attributes the baldness which supervenes during the progress of wasting diseases to the absorption or removal of fat from beneath the scalp.

Loss of Hair, to a greater or less extent, is

* See Dr. Copland's Dictionary of Practical Medicine: Art "Hair."

an accompanying symptom of several of the eruptions of the head. It may be seen, for example, during the progress of pityriasis, impetigo, ringworm, and favus.

In some instances the scalp is covered with furfuraceous thin scales, which are rapidly reproduced, and seated on an erythematous base. In others, the destruction of the hair is produced by disease of their bulbs, and the skin externally does not seem to be the seat of any lesion whatever.

In senile baldness, for example, there is no visible nor actual alteration in the external cutaneous surface, the disease being produced in this instance, according to Bichat, by the gradual diminution of the cavity of the bulbs, and the obliteration of the follicles. In the latter cases no remedy or method of treatment will be of any avail.

Whatever tends to produce an established relaxation and want of tone in the cutaneous vessels and in the hair follicles and bulbs, becomes a cause of baldness, and hence it is a frequent sequel upon fevers of various kinds. In these and similar cases, in which the organs

that secrete the hair are merely in a state of atony, and not destroyed, judicious treatment will succeed—the main object of the local treatment being to excite the capillary circulation of the scalp, and thereby to alter the vitality of the hair follicles and bulbs, so as to enable them to resume their normal functions of secreting and nourishing the hair.

Decoctions of wormwood, walnut leaves, horehound, lesser centaury, mustard seeds, in aromatic wine or alcohol, of various degrees of strength, myrrh and hellebore, and embrocations of the oils of lavender, juniper, or of chamomile, rosemary, thyme, mace, or turpentine; also alcoholic solutions of zinc and copper, and the tinctures of capsicum and cantharides,—these, and a variety of other remedies too numerous to mention, have been recommended for the cure of baldness or partial falling of the hair.

I have found the action of the remedies above mentioned to be always uncertain, and seldom effect any good. Greasy applications such as ointments and pomades, are, in the majority of cases of diseases both of the Hair

and Scalp, positively injurious, and the beneficial effect they are alleged to produce in some rare instances, is, in my opinion, very problematical.

APPARATUS FOR FUMIGATING THE SCALP IN CERTAIN CHRONIC DISEASES INVOLVING LOSS OF HAIR.

From a knowledge of the undoubted efficacy produced by the application of vapour, simple or medicated, to the human skin in cases of inveterate disease of that structure on other parts of the body, it occurred to me that similar applications to the scalp in cases of eruptive disease involving the loss of Hair, would also be attended with good results. I accordingly made the trial, and found that I had not deceived myself.

Messrs, Ferguson, surgical instrument makers to St. Bartholomew's Hospital, 21, Giltspur Street, made, under my direction, the Apparatus figured in the frontispiece, and described below, which was exhibited at the Royal

Medical and Chirurgical Society in February of last year.

The Vapour Apparatus is extremely simple. It consists of a tin jar, about ten inches by four, with a conducting tube, on which is placed a stop-cock, for the purpose of diluting the vapour, or turning it off, and an elastic cap of Vulcanised Indian-rubber, which fits closely to the head, so as to prevent the vapour from escaping. A spirit-lamp to sublime the appropriate medicinal agent completes the apparatus for fumigating the scalp. In order to apply the vapour to the face, forehead, or temples, when occasion requires, one or two funnel-shaped tubes of caoutchouc are made to screw on to the metallic conducting pipe, about two inches beyond the stop-cock. Rebellious patches of acne, or impetigo figurata of the face, may be treated in this manner without risk of inhaling the vapour.

The remedies I have chiefly employed for fumigating the scalp in the manner described, are iodine, sulphur, mercury, and the volatile gum resins. The hair should be cut close in every instance with the razor-scissars, (but the

head should not be shaved,) before applying the vapour. The application may be continued for twenty minutes or half-an-hour each time. It will cause an itching or prickling sensation all over the scalp, and the head will then become bedewed with perspiration.

The great majority of diseases of the skin are constitutional, and those of the scalp are not an exception to the rule. Yet every practitioner is familiar with the difficulty of removing the latter by the unaided influence of constitutional treatment. Porrigo favosa, for example, which is one of the most unsightly, as well as the most inveterate, of the eruptions of that region, may be temporarily relieved by tonics and fomentations, and the skin even made to appear clean and healthy; but the virus still remains, and consequently the "cure" will be but of short duration.

In this, as in other inveterate diseases of the scalp, of constitutional origin, the skin, from the force of habit, adapts itself to the morbid condition, which it retains with singular tenacity, against all the usual methods of treatment. In all similar cases, the applica-

tion of vapour, simple or medicated, as the case may require, to the diseased scalp, will be found a very efficient remedy.

When the object is to *alter the vitality of the parts*, this can be done more effectually by the repeated application of stimulating vapour, (the skin being previously cleansed with any detergent wash, and the hair cut close,) than by the employment of caustic lotions or ointments. Indeed, greasy applications of every kind may be advantageously dispensed with in the treatment of diseases of the scalp. That variety of baldness or loss of hair, which is the result of atony, relaxation, or disordered nutrition of the hair follicles and bulbs already described, will be materially benefited by the employment of the vapour apparatus.

I shall not enter further into the subject of "Loss of Hair," or of the diseases which cause it, in this place, as both are fully discussed in the following pages by M. Cazenave. I shall merely mention that at the time of writing his interesting memoir last summer, M. Cazenave was not aware of the method of treatment of those lesions, adopted by myself, and de-

scribed above. His own treatment for baldness or loss of hair, is rather of a negative kind than otherwise; but his condemnation of the popular agents employed for that purpose is as forcible as it is correct. The reader will see the real character of those agents in the sequel.

The history of the various diseases of the scalp, in the treatment of which the Fumigating Apparatus may be advantageously employed, is fully described in my recent work on the "ERUPTIONS OF THE FACE, HEAD, AND HANDS;" hence I have not thought it necessary to enter into further details here, where the subject immediately under consideration relates to the Diseases and Management of the Hair.

T. H. B.

CHAPTER II.

REMARKS ON THE ANATOMY AND PHYSIOLOGY OF THE HAIR.*

UNDER the designation of *follicle* and *bulb*, is described an organ seated in the skin, and immediately concerned in the production or generation of the hair. According to Dutrochet the "folliole" is simply a reflexion

* This chapter contains several physiological statements directly opposed to the experience of some of the most eminent microscopical observers of the day. As M. Cazenave insists upon the correctness of his own views, I have felt it my duty to give them without modification, and in the *ipsissima verba* of the distinguished author. There is one point, however, upon which I shall take the liberty of differing from him. M. Cazenave asserts that the hair is not a living or organized structure. This is contrary to

of the skin upon itself;* but whatever truth may be in this statement when viewed through the light of transcendental anatomy, it affords no indication of practical utility.

I look upon the hair follicle as a variety of the great family of *glands*, so extensively diffused throughout the system, so different in form from each other, but all having the same purpose, namely, secretion, however the products secreted may vary in each particular instance. This follicle is a small sac lodged in the true skin, and sometimes even extending

the generally received opinion, and is altogether unsupported by positive data. That the hair is a living organized structure does not, I think, admit of doubt, and the same may be said of the nails, which the author places in the category of dead inert appendages, with the hair. The quills of the porcupine, and the feathers of birds, which are modifications of the epidermic tissue, and in their essential characters closely allied to the hair, possess vitality, as well as the structures from which they are formed. Indeed, all these appendages, as long as they are attached to living bodies, are endowed with vitality.—B.

* Mémoires pour servir à l'histoire anatom. et physiolog. des animaux et des végétaux. Paris, 1847.

deep into the subcutaneous areolar tissue. It is, generally speaking, very adherent to the skin by its external surface, and from which it is difficult to be detached. Its internal surface is free, being merely bathed with a reddish coloured fluid, which Heusinger says is for the purpose of preventing its contact with the hair, the root or germ of which it contains.

If the follicle consisted merely of this sac, it would bear a close analogy to the sebaceous follicles which are, like itself, formed, as it were, at the surface of the skin, so as to resemble a kind of neck or gullet; but at the base of the hair follicle, a conical-shaped papilla is situated, surmounted by the part of the hair which Henle calls the *bouton*. This papilla, which is also called the *pulp* of the hair, is traversed by blood-vessels and nerves entering from the base of the follicle. When viewed under the microscope it seems to be composed of globular-shaped bodies, which are insensibly lost or mingled with the elongated globose bodies of the *bouton*. Some writers have entertained the opinion that the

disease known under the name of plica Polonica is the result of abnormal development of this part of the apparatus.

The hair follicle is composed of two sheaths, one external, of a whitish colour, remarkable density, and adhering closely to the skin; the internal sheath is thinner and of a reddish colour. In the interval between these two membranes, a number of minute sebaceous follicles are disposed in a circular form round the orifice of the hair follicle. The relation between the epidermis and the tube under consideration has been a subject of much discussion amongst microscopical observers. According to one, the epidermis is reflected upon the internal surface of the follicle; according to others, it is continued along the hair in its growth externally. But, as Burdach has remarked, if Leuwenhoeck, Heusinger, and Weber, have positively ascertained that the hair placed under the epidermis, perforates it only consecutively, there is error on both sides.

At the bottom of the follicle the hair is formed—a kind of filiform shaft, composed of

two distinct substances, one external, smooth, and transparent, called the *cortical* substance, the other internal, known as the *medulla.*" *

The cortical substance appears to be composed of longitudinal fibres, continued through the entire length of the hair, and which, according to Henle, are transparent, with slightly opaque and rugged edges, straight, stiff, and fragile, diameter 0·0027 of a line, and perfectly flat. Henle could not ascertain if they anastomose occasionally or if they remain always isolated. These fibres are perceptible even near the point of the hair; towards the root they gradually disappear, and are replaced by small bodies more or less elongated.

Above the root of the hair transverse fibres may also be observed, anastamosing in a variety of ways, and only existing on the cortical surface. According to Henle they are so close packed that twenty, and sometimes more, may be counted in the space of a line.

* M. Cazenave includes the fibrous portion of the hair in his description of the cortex, instead of adopting the usual division into three of the component parts of the hair.—B.

It was doubtless the existence of these transverse and longitudinal fibres that led Mascagni to regard the hair as being entirely composed of absorbent vessels.

Besides these fibres, some microscopists have described fibrillæ which shoot out from the trunk of the hair, like the beard of a blade of corn, and which they suppose explains the observation of Fourcroy, who remarked that a single hair when rolled between the fingers always advanced from its base to the point. The phenomenon, however admits of another explanation, for anatomists generally attribute this peculiarity of progression to the conical form of the hair. Be that as it may, these fibrillæ explain sufficiently the tendency which the hair has to mat or entangle during the progress, or at the termination of severe diseases.

The medullary substance is formed of a number of minute, shining, globular bodies which have the appearance of little drops of oil, or of pigmentary granules. Two parallel bands of this medullary substance may be sometimes seen separated from each other by

a clear striated line for some distance, and finally blending together in a single bundle. The diameter of the medullary substance is to that of the hair as one to three or to four. Mandl thinks that air is contained in this component part of the hair. It was for a long time believed that the colouring fluid circulated in the centre of the hair, but the idea has been exploded by the researches of modern microscopists.

If a single hair be carefully examined, it will be found not to be cylindrical, as might be inferred from a superficial examination, but perfectly conical. The form of the cone of the hair is, according to Burdach, partly hollow on one side, so that if cut transversely, it will disclose an oval or even reniform surface. Contrary to the generally received opinion, Weber states that the hair curls more readily in proportion as it is flattened. He observed that one of the diameters was to that of the other as 1 : 1·40 in a straight hair, and as 1 : 2·22 in a curled or crooked hair.

The development of the hair is perhaps the most interesting part of its entire history. Unfortunately, however, there are several points connected with this process which science has not yet been able to disclose. But the main question is this. How is hair produced? by what process does it acquire its full development? It is very evident that the hair is deposited primarily in the intra-follicular *papilla* to fulfil some object; but is it not a secretion as inorganic or lifeless as the epidermis itself? Bichat considered that this is true as regards the cortical portion; but he supposed that the medullary substance is a kind of reunion between two sets of vessels, one in which the colouring matter of the hair stagnates, the other giving issue under certain circumstances to fluids, and forming consequently a sort of circulation through the hair.*

Most of the modern microscopists consider the hair to be a living structure, deriving its vitality from the *papilla*, whence originate the portion called by Henle the "pulp," and in

* Traite d'anatomie descriptive. Paris. 1811.

which perhaps terminate the vessels and nerves that traverse the base of the follicle. According to this view, then, the hair is not merely an inert product of secretion; and it derives a certain kind of support from the fact that this appendage seems to be influenced, in some instances, at least, by those intense passions which profoundly disturb the human system.

Grellier explained in the same manner all those cases of sudden canitia or hoariness of which history makes such frequent mention. Schenkius relates the case of a Spanish nobleman who was surprised while in intimate conversation with a lady attached to the court, was thrown into prison and condemned to die. The sentence had so great an effect on his mind that his hair turned perfectly white in one night. The king hearing of this occurrence granted his pardon, saying that he was sufficiently punished by his anticipated old age. Vicq d'Azyr relates the same phenomenon in connection with Marie-Antoinette, who turned perfectly grey the night previous to her execution. Bichat mentions many similar instances, the truth of which I am far from

doubting, but I ask do these facts lead to the inevitable conclusion that the hair is of itself a living structure; I am, on the contrary, disposed to view those sudden transformations merely as lesions of the secretion of the colouring matter, but independently of any alteration in the hair itself.

That peculiar effect of fright by which the hair seems to stand on end, has been cited in support of this view; but I have elsewhere shown that this phenomenon depended entirely upon the contraction of certain muscles which singularly diminishes its value. Finally, Shenkius relates the case of a young girl who finding her father dead in his bed of a morning when she went to call him, received such a mental shock that in the space of four days she lost all her hair, and continued nearly altogether bald during the remainder of her life. This case, which is not one of common occurrence, may be very easily explained by the circumstance of a sudden and profound lesion of the organs in which the capillary secretion takes place, but independently of any alteration in the hair itself.

Many writers have described certain seccretions which they alledge are peculiar to the hair. Thus, for example, Heusinger has observed a secretion which he calls pigmentary, and which is sometimes sufficiently abundant to discolour the hair He believes that this pigment is composed of carbon, a circumstance that explained, in his opinion, those electrical phenomena observed in the hair of certain animals. He also supposes that when the secretion is superabundant it is discharged by the extremity of the hair, where an opening may be found as in the quills of the porcupine, the hair of the musk-cat, or of the hind. But this hypersecretion merely shows that the hair is a sort of canal, protecting, without taking any active part in, certain phenomena of the circulation.

Grellier remarks that lame persons have generally very fine hair, and he explains this singular circumstance by the fact that lameness being the result of ricketism, the bones become softened, no longer admit the phosphate of lime, and this salt becoming superabundant, passes for the most part to the hair,

the vitality and development of which are thereby greatly increased. This theory is no doubt curious, but unfortunately its fallacy is betrayed by the fact that there is no phosphate of lime in the chemical composition of the hair.*

On the other hand, Girou considers the horny substance of the hair to be a sort of neurillemma on which depend their shape, volume, consistence, brilliancy, and suppleness, and regards the hairs themselves as organs performing certain important functions in connexion with the nervous system. F. Cuvier classed the organs which secrete the hair as a system analogous to that of the senses. And still more recently Mandl has observed a fact connected with the production of the hair which, while it invalidates the statements of Mariotte, tends to prove that the hair may, as we observe in the vegetable kingdom, develop itself at the same time in all its component parts.

Having cut off part of a single hair,

* Vauquelin says that the hair contains traces of both the phosphate and carbonate of lime.—B.

Mandl observed that after a certain period, its free extremity, which previously terminated abruptly, became gradually rounded off; "Hence," he says, "I was compelled to recognize in the hair the existence of internal nutrition or organisation." This observation has been disputed by M. Ollivier of Angers,* who cited in opposition a multitude of facts, with the view of disproving it. The accuracy of Mandl's observation remains to be proved by the concurrent testimony of other observers.

However, in my opinion, the hair is, like the nails, an inorganic production, having no independent vitality, the mechanism by which it is developed and continued, existing entirely in that intra-follicular papilla, which I have already described. The entire development of the hair commences there, and it is to that primary influence that the variations in diameter, length, &c. of the hair must be attributed. It may be asserted, as Bichat has done, that the hair is a cortical canal, a sort of envelope, in the interior of which certain phenomena of organisation are accomplished,

* *Dictionaire* de Médecine, 1842, art. Poils.

that exercise an influence upon the fluid which circulates through it; but, I repeat, that the hair itself, at least in my opinion, is an inert, inorganic substance, which possesses no more vitality than the nails or epidermis. The insensibility of the hair, its resistance to decomposition after death, support this view.

If it be asked, then, what is the nature of the hair, what its mode of development, the inquirer will find that these questions are still very imperfectly understood, if not altogether insoluble. Modern science, aided by the microscope, has endeavoured to raise the veil from this obscure point of physiology. But has it succeeded? It would be at least rash to reply in the affirmative to this query; for the theory of Heusinger is still received with much hesitation, which goes to maintain that the pigmentary globule is the origin of the hair, like a papule of lichen which becomes a vesicle, and is at a later period transformed either into imperfect and articulated hair, as wool; or into perfect and continuous hair, as that of man. Be that as it may, however, the following is the manner in which Simon, as

quoted by Henle, describes the process of development of the hair. "The follicles appear at first in the form of minute bodies, clear or opaque, 0,0065 to 0,0089 of an inch in length to 0,0035, or 0,0040, in breadth, at the broadest part. Their parietes consist of minute granular bodies, packed close together, which are probably the nuclei of the elementary cellules; the dark bodies present also radiated pigmentary cellules. When the formation of the hair commences, there appears in the little sacs a dense mass of pigmentary cellules, similar to those of the Malpighian rete. This mass has the form of the root of the hair. The root extends itself from a small point deprived of medullary substance, so that it would appear that from the first moment of its formation, the hair possesses all the component parts of perfect hair, but that the shaft is merely very small."

It is about the end of the third month of intra-uterine life that the hair begins to form. According to Valentin it first appears in the form of minute, round, black spots, which do not assume a conical form until the end of the

fifth month. Weber and Heusinger state that they are reflected upon themselves before piercing the epidermis. Bichat says that they appear at the period of the formation of the fibres of the dermoid structure in the form of a whitish down, which gradually assumes the colour, whether dark or fair, that the hair is ultimately to possess.

At the period of birth, the hair varies in length from one to four centimeters. It is in general very scanty at this epoch, and only becomes thick towards the end of the first year. At a later period it acquires variable dimensions, according to the constitution of the individual and the race to which he belongs. Generally speaking, the mean diameter is, according to Weber, 0·04 of a line. Withof entertains the opinion that the diameter depends upon the colour of the hair, and that it is greatest in proportion as that colour is darkest. This author had the curiosity to count how many hairs a square inch would contain, and he ascertained that three equal squares contained 572 black, 608 brown, and 790 fair hairs. With regard to the length of

the hair, the variations are more easily appreciable.

Every one knows that the female hair is much longer than that of men. Is that circumstance owing, as Grellier supposes, to the fact of the greater abundance of cellular tissue beneath the scalp in women, which furnishes to the hair a sort of bed, irrigated with juices, whence it derives an abundance of the materials of nutriment necessary for its development and preservation? But the same condition of the parts may exist in men, without, however, causing the hair to grow as long as it does in women. Girou attributed the difference in the length of the hair in the two sexes to the accumulation of electrical excitants in the female, but this is mere conjecture.

The temperature of the climate in which men live exercises a marked influence upon the growth and length of their hair. The races which inhabit cold and humid countries have straight, flowing hair, and always well developed. The ancient inhabitants of France, when that country was covered with woods, lakes, and marshes, were much more hirsute

than the French of the present time. The inhabitants of the torrid zone have short curly hair, a circumstance which illustrates the observation of Bichat, who states that the hair has a tendency to increase in length in proportion as it is naturally smooth, straight, or not curly. The short, frizly hair of the negro supports this view. Burdach says, the length of the human hair chiefly depends, on the depth in which it is implanted in the scalp.

The hair possesses a power of resistance almost incredible to those who have not tested it. Bichat did not hesitate to say that there was no other part, not even of the fibrous structure, capable of supporting so great a weight in proportion to its volume. Grellier, who entertained a similar opinion, estimated that a single hair would support the weight of 1034 decigrammes.

The hair is idio-electric, and endowed with positive electricity. It is also hygrometric, and this property has been taken advantage of in the construction of certain kinds of barometers. It is extensible, and Weber says that

a hair ten inches long is capable of being extended more than a third of its length. It is very elastic: for a hair that has been elongated only a fifth recoils upon itself and is but $\frac{1}{17}$ longer than it was before the traction.

When submitted to the action of several reagents the following were the results. When boiled the hair forms a solution which does not coagulate when cold, and is not precipitated by the tincture of gall-nuts or the chloride of tin. Potash, soda, and ammonia dissolve the substance of the hair in forming soap and disengaging sulphuretted hydrogen. The metallic oxides colour and combine with it. The acids dissolve it.

The following is Berthollet's analysis of the hair, French measure:—

Oil	0·2500
Water . . .	0·1555
Carbonate of ammonia	0·0781
Carbon . . .	0·2812
Different gases . .	0·2352

According to Scherer's analysis, the follow-

ing are the proportions of the elementary constituents of the hair :—

Carbon . . .	50·652
Hydrogen . . .	6·769
Nitrogen . . .	17·936
Oxygen, Sulphur . . .	24·643

The colour has always been a point of considerable interest in the physiology of the hair. The ancients explained the diversity of colour by the predominance of certain humours in the system. They supposed it was influenced by the blood. Modern science does not admit such vague conjectures.

Bienvenu says that the various colours of the hair may be reduced to three principle ones,—black, red, and white, of which all the others are merely so many different shades; but it appears to me that white is either the result of absence of the colouring matter, as in the albino, or of discolouration of the hair, as we see in the diseases, vitiligo and canitia, therefore I think it better to reduce the types to two principal ones, as Grellier has done, namely red and black, to which belong the

intermediate or decreasing shades, brown, chesnut, fair.

Independently of these distinctions, the colour of the human hair is subjected to certain influences the study of which is not devoid of interest. Thus, for example, the colour varies in a remarkable degree according to the climate in which men live. The nearer we approach the north, the fairer we observe the hair of the inhabitants; and in the Polar regions the pigmentary or colouring matter appears to be altogether wanting. The hair both of men and animals is almost white. According to Girou this deficiency of colouring matter is remarkably evident both in the rabbit and in the feathers of the peacock.

History affords traditionary support to those physiological facts. The Gauls, for example, living in a cold humid country in the midst of forests, we are told by many historians, were characterized by pale or fair hair similar to that of the Germans of the present day. In proportion as civilization advanced, and the forests and swamps disappeared, the climate became more salubrious, the temperature

more elevated, and the fair hair of the inhabitants was replaced by hair of different shades of chesnut, becoming gradually darker. On the other hand, the people who inhabit warm countries possess in general dark hair, as for instance the Egyptians, Italians, Spaniards, Greeks, &c.

It has been supposed that the colour of the hair is influenced by the constitution of the individual. Thus, for instance, brown hair is associated with a bilious constitution, and, on the contrary, fair or chesnut colour with a lymphatic one. These coincidences may frequently be observed, but not invariably: wherefore no positive conclusion can be derived from them. The most powerful of all influences upon the colour of the hair is that of age. Thus, during the period of intra-uterine life the downy hair is pale, almost colourless: at birth the tint becomes gradually darker, until at the period of virility it assumes its normal or natural colour. Again, when the period of old age arrives, the hair becomes first discoloured, then white, and finally disappears never to return.

Some writers have supposed that there exists a certain relationship between the colour of the hair and the moral temperament, so to speak. Thus, for example, rapidity of the circulation, love of change, vivacity of the imagination, in a word, all the attributes of the sanguineous temperament are associated with chesnut-coloured hair. Black hair, on the contrary, is supposed to indicate strength, energy, ambition, and the passions; and fair hair represents a soft and lax fibre, and is the emblem of mildness, tenderness, and judgment, in short, of all the qualities which are usually associated with a calm and mild temperament.

Pinel states that insanity is observed to vary in its type or character according to the shade of the patient's hair. That, for instance, fair-haired lunatics are inclined to dreamy delusions and reveries, and the dark-haired more generally to furious mania. It is, however, unnecessary to remark that there are many exceptions to this rule, and that the observation of Pinel has but a limited application.

CHAPTER III.

ALOPECIA;* OR, LOSS OF HAIR FROM NATURAL CAUSES, DEBILITY, OR DISEASE.

ALTHOUGH alopecia almost always presents the same external appearance, it may nevertheless be the result of very different anatomical and physiological conditions. For example, it may be caused by alteration or even destruction of the hair bulb; or, it may occur without any alteration of the bulb whatever, as the result of lesion of the secretion destined for the formation of the hair, which secretion may even be completely suspended for a certain time: or, finally, it may arise from local inflammation, acting mechanically, so to speak,

* From αλωπηξ, a fox; because the fox is subject to a species of baldness, or falling off of the hair.

upon the scalp, and causing the hair to fall either temporarily or permanently, as we see occurring in several diseases of that region.

I propose to describe, in the following pages, under the title of ALOPECIA, all the various modes in which baldness is occasioned, and to embrace every variety of that condition under the two sub-heads :—

I. Alopecia from natural causes.

II. Alopecia from disease.

I. NATURAL ALOPECIA.

This variety includes congenital and senile baldness, both of which are characterized by an important feature—namely, structural alteration of the hair-bulb. In the former this alteration is primary, in the other secondary. In both cases it is a necessary and indispensable character. Alopecia, however, does not pursue the same course in the two instances.

Congenital alopecia may be general, but this is a very rare occurrence, and it may

be as well to bear in mind that it is not the result of total absence of the bulbs, for even when the scalp is completely and primarily destitute of hair, there may always be found here and there over the cranial envelope a sort of thin weak down, which at least proves the existence, and, to a certain extent, the vital action of the hair follicles. This variety may be stated to consist in a peculiar abnormal condition of the bulb, with lesion or insufficiency of the secretion from which the hair is formed.

Congenital alopecia is generally partial. It is not an uncommon occurrence to observe small circumscribed patches on different parts of the scalp, where there never had been hair, and never will. These patches are smooth and shining, but do not present the peculiar smooth and milky appearance of vitiligo, nor the cicatrised aspect of the baldness resulting from porrigo favosa.

Senile baldness is of such frequent occurrence at a certain age that, as regards men particularly, it seems to be a normal or natural condition to which the occasional cases of

persistance of the hair in old age are merely exceptions. If we were to be guided by its name, this variety of baldness should never appear before the fiftieth year at least; but many circumstances, as for example, want of sleep, grief, long-continued and laborious mental occupation, may materially hasten its appearance, and we frequently see young men under twenty-five years of age, who had previously had an abundant head of hair, become completely bald from one or other of the causes referred to.

Senile alopecia usually commences on the top of the head where the hair forms a kind of central point, called the *vertex*. It extends thence in a forward direction, giving to the forehead an appearance of height, that is often described as the symbol of wisdom and experience, and finally proceeds downwards to the temples, which however are more frequently characterized by hoary locks than by baldness.

The skin, now denuded of its covering, loses its natural aspect. It becomes smooth, yellowish, and sometimes shining like a cicatrix.

In this and similar instances, the bulb is completely atrophied or destroyed; in other cases it is only more or less altered, when we may perceive here and there on the bald patches some thin, straggling, discoloured hairs, which show the existence of the hair follicles, however degenerated they may be.

Having arrived at a certain point, senile alopecia may cease to advance further, and become confined within certain limits; or, as more commonly happens, it may proceed slowly and gradually until the whole extent, or very nearly so, of the scalp be affected; but even in the most extensive cases of baldness there are always to be found at the back of the neck a few scattered hairs which sometimes preserve their normal appearance.

To the type senile alopecia belong all those cases of premature but irremediable baldness met with in youth and in the prime of life, whether occurring spontaneously or resulting from causes which profoundly disturb the system, as close application to study, anxiety in the various forms in which it pursues us through life, excess in the use of wine, or *indulgence of* the passions.

Senile alopecia is almost entirely confined to men, and it possesses this distinguishing character, which will prevent it from being confounded with any other form of baldness—it is incurable.

II. ALOPECIA FROM FUNCTIONAL DISTURBANCE OR FROM LOCAL DISEASE.

This form of alopecia is associated with two distinct conditions. For instance, it may be the result of a general morbid influence existing, or having existed in the economy, or of functional or organic disturbance which is not always easily detected; or, on the contrary, it may be produced by local phenomena, an eruption of the scalp, for example, and this double character leads me to describe it in two sub-varieties: alopecia, symptomatic of a general condition of the system; alopecia, symptomatic of a local state of the scalp.

Alopecia resulting from constitutional causes.

This variety is deserving of our best atten-

tion, if it were only on account of the obscurity, I might almost say mystery, with which its history is enveloped. The loss of hair is not in this case the result of primary absence, or of subsequent obliteration, of the bulb, nor can it be attributed to faulty nutrition of the hair itself, or said that this has never been secreted; for the bulb is always present, and the hair is always fully developed.

This form of alopecia, in fact, depends for its existence upon general and immediate causes which can be sufficiently understood without attempting to explain their mode of action upon the alteration of the hair—it is, in a word, the external expression of some great constitutional derangement which profoundly affects the system.

Thus, for example, it is a frequent sequence, or an accompaniment of, small-pox, fever, consumption, and indeed every serious disease of the system, and is usually preceded by an unhealthy matting or entanglement of the hair, somewhat similar to the affection described by authors as the *false plica*. Loss of hair also occurs frequently, during or after the period of

childbed, after long confinement in prison, under various conditions of misery, and under almost every influence calculated to reduce the vital force.

We must also range in this category, loss of hair occasioned by long vigils, mental anguish, indulgence of the passions, when this condition is temporary, and does not possess the peculiar characteristic of senile baldness already described—namely, incurability.

To this class also belongs the variety described under the name of syphilitic alopecia, and to which some authors have given the distinctive appellation of *pélade*. It is far from being of such rare occurrence as it has been described to be by writers, and for my own part, I have frequently met with cases of it. This form of alopecia is one of the secondary or consecutive phenomena of syphilis, and usually appears after that disease has manifested itself by some other constitutional symptom, but is also sometimes associated with a special eruption, pains of the bones, &c.

There are cases, however, in which it occurs as the only external symptom of the

syphilitic poison, and also where it appears as the first symptom of secondary syphilis. Apropos of this latter proposition, a very curious case occurred in my practice lately, of a patient attacked with this form of alopecia whom I had treated for gonorrheal orchitis. In the space of four months, and without any intermediate symptom whatever, this patient's black and beautiful hair fell off almost entirely, and the alopecia only yielded to an active special treatment.

Syphilitic alopecia generally commences on the crown of the head, which it rapidly deprives of hair. It may extend thence over the entire scalp; but it is worthy of remark that this form has less tendency to produce general baldness, than to cause an extensive thinning of the hair, which loses its lustre and natural appearance, and becomes dry, dull, and fragile. It is even discoloured, and readily falls off under the operation of the brush and comb.

The genuine syphilitic alopecia is never accompanied by any local phenomena, either in the form of eruption, ulceration, or des-

quamation. It is evidently the result of that specific alteration of the system, which develops, with greater or less rapidity, and more or less completely, the syphilitic infection. It is seldom generally diffused over the scalp, but exists principally along the upper and anterior part of the head, and is occasionally accompanied by loss of hair on other regions, as the eyelashes, eyelids, beard, &c.

The duration of this variety is necessarily variable, as it depends upon the skilfulness with which a sound rational treatment is administered. Generally speaking, the hair is reproduced, and sometimes as copious and as fine as it was originally; but there are cases in which it ever remains thin, weak, and dull. The latter condition is met with chiefly in persons of advanced life, in whom the secretion of the hair has already begun to fail.

This first variety of alopecia from general causes, depends upon certain conditions of the system, and it is necessary not to confound it with the complex variety which I am now about to describe. It is almost always evanescent; and as soon as the constitutional

cause which occasioned it is removed, either by the natural reaction of the system, or as more frequently happens, by the judicious administration of rational treatment, the hair will soon reappear and cease to fall.

Alopecia symptomatic of local disease.

By this definition is meant loss of hair from *disease* seated in the scalp, whatever may be its character or gravity.

This variety of alopecia is associated with two distinct orders of things which it is important to understand. In one case, inflammation is the active agent, becoming a sort of mechanical cause of the shedding of the hair, the fall of which is facilitated by the presence of the secondary products of inflammation, as scales, incrustations, &c., which occur in all the eruptions of the scalp, causing alopecia, with the single exception of vitiligo. In the second case, the alopecia may be either temporary and remediable, as it is most frequently, or permanent and incurable, which is the exception.

The reader who wishes to study the method

by which the different forms of inflammation cause the hair to fall is referred to works on diseases of the scalp, and under the head of the different eruptions of that region he will find the morbid process fully described. For the present it will be sufficient to point out those diseases of the head which are either the accidental or essential causes of alopecia.

The passing and remediable alopecia, resulting from local causes, occurs during the acute eruptions, as for example, in *eczema* and *impetigo*, and is in both cases always curable. Indeed, it is worthy of remark, that in proportion as the eruption is active or acute so is the loss of hair temporary and remediable. This variety is also met with, and more frequently than in the preceding cases, during the progress, or at the termination, of certain *chronic* eruptions of the scalp.

Thus, for example, it accompanies herpes tonsurans, pityriasis capitis, psoriasis and lepra, vitiligo and acne sebacea. It is also a result of syphilide of the scalp. This, however, must be distinguished from the form of syphilitic alopecia already described as result-

ing from general constitutional infection. When a syphilitic eruption appears on the scalp it acts, as regards the removal of the hair, precisely as any other form of inflammation, that is to say, locally or mechanically.

If the eruption has left indelible cicatrices behind, the hair will not grow upon those spots, but otherwise it may be safely stated that however extensive alopecia resulting from *local* syphilis may be, it will cease and the hair will grow again under the influence of rational treatment.

The permanent and incurable form of alopecia resulting from local causes, is the necessary consequence of porrigo favosa, an intractable disease of the scalp.

Diagnosis. Having now explained, as far as the present state of anatomical science will permit, the causes of alopecia, i. e., to indicate the morbid conditions in which it occurs, it only remains for us to group together a few general characters, by aid of which we shall be enabled to specify and recognize the different forms of alopecia, and especially to distinguish one from another. Congenital and

senile alopecia, are obviously so peculiar and self-evident, that it is scarcely necessary to dwell upon their distinctive characters.

However, when the latter form is premature, when it occurs in persons who are still young, the diagnosis may occasion some doubt and hesitation. But if the observer will bear in mind that senile alopecia advances slowly but uninterruptedly, a character peculiar to itself; that it invariably begins at the upper and posterior part of the scalp; that it proceeds step by step, producing that peculiar modification of the scalp so characteristic of the baldness of old age, and finally, that it is accompanied by canitia even when it is premature, he may always avoid a mistake on this score.

With regard to the form of alopecia symptomatic of general causes, it is always easy to discover that the loss of hair is the result of some previous severe disease; that it is occasioned, or is at least singularly favoured by mental disturbance, want of sleep, excess, misery; however, it may be useful to remember, that in this case, the condition of

alopecia is complicated with an evident alteration in the structure of the hair, that the scalp is in every part more or less uncovered, that the hairs are not necessarily white, and that the hair is altogether unhealthy although the alopecia may only be partial.

It may, on the other hand, and in spite of all these facts, be difficult to recognize in some cases, the genuine syphilitic alopecia. The diagnosis may, indeed, be assisted by the presence of other special and accompanying symptoms; but we must not forget that there are cases in which alopecia is the only actual expression of the specific infection.

In this case it will be necessary, after having ascertained that there are no morbid conditions present or past, to which the denudation of the scalp can be attributed, as serious general disease, excessive fatigue, &c., to bear in mind that the leading character of syphilitic alopecia is that it is never accompanied by local inflammation in any form, not even by the slightest desquamation, that it is remarkably diffused over the scalp, and is accompanied by a peculiar condition of the

hairs, which are dry, crooked, and sickly-looking.

If to these characters be added the antecedent history of the patient, it will not be difficult to discover the true cause of the shedding of the hair.

Alopecia symptomatic of a local condition of the parts, is appropriately described with the diseases which produce it. To understand it thoroughly, it is necessary to study the history of the diseases referred to: however, it may be useful in this place to recapitulate the different characters which distinguish the various methods by which the scalp is deprived of hair.

In the acute eruptions of the scalp, as for example eczema, impetigo, and also certain forms of erysipelas, the hair falls here and there, enfeebled by the inflammatory process, and pulled out by the secondary products of inflammation, or drawn during the necessary operations of the toilette. Alopecia is in this case evidently accidental. It is not the necessary result of disease, for it may be absent altogether.

In pityriasis and acne sebacea, it is also evidently occasioned by a mechanical cause, so to speak; but in these two forms it assumes a frequency or intensity which gives it a peculiar character. However serious and complete it may appear, it is never permanent. The scales of pityriasis, moreover, may be easily recognized in the one case; and with scarcely more difficulty in the other, the sebaceous patches of acne of the scalp.

There are also, in a pathological point of view, diseases specially connected with alopecia. These are, vitiligo, ringworm, and favus. The smooth, discoloured patches of a milk-white colour, of vitiligo; the greyish, scaly, striking discs of herpes; the transparent cicatrized spots of favus, are familiar to every medical man, and are sufficient to form the basis of diagnosis of these interesting varieties of alopecia.

Senile baldness brings with it the inconvenience which attaches to all the attributes of old age. Symptomatic alopecia may always be cured, however extensive it may be. Alo-

pecia, the result of local causes, will be removed with the diseases which occasioned it, except in the case of favus.

Treatment. For senile or congenital alopecia nothing can be done. It is in those cases that recourse is had to the artificial scalp which has been adopted from the earliest time to conceal the defects of age or of nature. Alopecia resulting from general disease or from profound constitutional disturbance will disappear in most cases with the removal of the cause which produced it. However, in this and similar instances the efforts of nature may be assisted by useful and efficacious remedies.

These are the cases in which the scalp may be advantageously shaved, and the secretion of the hair stimulated by dry friction, tonic lotions, as rum, for example, the patient being at the same time submitted to a judicious and well-devised system of regimen. Everything tending to debilitate the constitution should be removed or avoided, and the tone of the system invigorated by nutritious food. In cases of syphilitic alopecia, local or constitu

tional, the treatment is the same as that required for the original disease, as mercurials, iodide of potassium, &c.

The appropriate remedies for the forms of alopecia resulting from local causes are those required to combat the different eruptions of the scalp which may have occasioned them; but it is necessary to add that when alopecia is associated with *favus*, no remedies will be of any avail—it is incurable, and may therefore be ranged in the same category as senile and congenital baldness.

For the active treatment of those cases of loss of hair, in which the apparatus that secretes that appendage is not destroyed, and where medicinal agents are likely to be attended with good results, the reader is referred to the first chapter, in which the treatment of diseases of the hair and scalp by fumigation is described.

CHAPTER IV.

ON THE MANAGEMENT OF THE HUMAN HAIR IN HEALTH AND IN DISEASE.

THE following observations are intended to place before the reader a series of hygienic rules, sanctioned by experience, the chief object of which is the healthy preservation of the Hair, and also the reproduction of that appendage whenever it is possible.

Without indulging too much in fancy, it may safely be stated, that in the state of nature the human hair was intended as a covering to protect the head, and the important organs it contains, from the effects of cold air, solar rays, and every atmospheric influence. The force of resistance which each individual hair possesses, shows what a powerful

shield a copious supply of hair is to the head against violent contact with external agents; but in the civilized state the circumstances are altered: for we see that man has adopted in every clime and in every age, a head-dress of some kind, for the purpose of affording the protection which naturally devolved upon the hair. However, this function is not altogether superseded. Experience shows us that the scalp cannot be deprived, with impunity, of its protecting appendages.

In investigating more closely this interesting point of physiology, we observe that when the scalp is bedewed with perspiration, the hair with which it is covered enables it to dry gently and gradually without being exposed directly to the influence of the surrounding air. Before arriving at the cranial surface, the air is sifted, so to speak, by those delicate and pliant threads which cover the head, and is at the same time freed from all the particles of matter which adhere to the hairs, instead of passing immediately to the scalp, where they might produce an irritating and injurious effect. Finally, under the shelter and protec-

tion of the hair, the unceasing operation of transpiration is carried on upon the head, as it is on every other part of the cutaneous surface protected by clothing.

In the practice of medicine how many accidents may not occur from the sudden and complete removal of the hair! Whether the hair be suddenly removed during the progress of fever or of inflammation, or whether from being long and thick, it has been imprudently cut too close, the effect will be the same. Coryza, neuralgic pains, are the results of direct application of cold to the scalp, and even ophthalmia may supervene.

It is by no means rare to meet, in such cases, with inflammation of the ear, swelling of the lymphatic glands; and even still more serious accidents have been alledged to arise from the same cause. Be that as it may, however, it is quite certain, that in spite of our habits and prejudices, the hair on the scalp affords to the head of man protection and a covering which it is necessary to preserve as much as possible, in order that it may fulfil an end of undoubted importance.

That end or purpose, then, will form the theme of the subsequent observations on the hygiene of the hair, and, without attributing an exaggerated importance to the subject, it may be stated with truth and propriety, that an investigation of the means which may reasonably be expected to prolong and favour the existence of the human hair, is not unworthy of interest nor of the consideration of medical practitioners.

But if the hair is especially intended as a protecting covering for the head, it is also very evidently, whether nature or fashion made it so, an ornament for man and one of the elements of beauty. It is one of the most powerful charms as respects natural grace. It imparts dignity and majesty to man. It heightens and sets off all that is attractive and beautiful in the female countenance, and is proverbially a powerful cause of the respect which youth pays to old age.

Two considerations arise out of the preceding remarks, one medical and philosophical, involving an inquiry into the different rational

measures calculated to preserve and reproduce the hair, as the natural protection of the head; the other, more empirical than rational, has for its object the preservation or augmentation of that appearance which habit leads us to regard as the essential character of beauty in the hair.

2. If the human hair is intended to be a natural covering for the head, and cannot be suddenly removed without danger, as we have just seen, we ought necessarily to view in a strictly pathological light, whatever circumstances or causes have a tendency to denude the scalp.

In the chapter on Alopecia I pointed out the various different influences which may either cause the hair to fall. or cease to be secreted. I shall not return to that subject now. It is, however, necessary to add to what I have there stated one or two remarks which have especial reference to the hygiene of the hair.

For example, the shedding of the hair may be occasioned, or at least greatly facilitated,

by the very means adopted for dressing and adorning it. The too frequent use of hard brushes, fine-tooth combs, &c., and particucularly the use of those cosmetics which are recommended for the cure of alopecia, must be enumerated in the same category with those causes of destruction of the hair already pointed out. Without entering into the subject of the origin and progress of alopecia just now, it will be sufficient to state that the denudation of the hairy scalp is a pathological condition that should be *prevented* as much as possible by measures which experience has shown to be useful, leaving for secondary consideration those remedies of doubtful efficacy, by the aid of which persons have pretended, from time immemorial, to *repair* the devastations of the scalp.

3. If the hair, says Lavater, cannot be classed among the members of the human body, it is, at least, an essential adherent part of it. It affords a variety of indications of the temperament of an individual, of his power, of his habits of thought, and conse-

quently of his intellectual faculties. It corresponds with our physical constitution, as plants and fruits do to the soil which produced them.

The diversity in the colour and texture of the covering of the lower animals, sufficiently indicates the expressive meaning conveyed by the different qualities and colour of the human hair; compare the wool of the sheep with the fur of the wolf, the hair of the rabbit with that of the hyena. (Vol. ii. pp. 256, 257.)

I do not, however, intend here to study the hair through the medium of physiognomy, nor to revert to the varieties of quality in that structure, already described under the head of physiology of the hair. I wish merely to establish that this part of the organism, regarded even through the limited point of view of its hygiene, is not a mere accessory that may be regarded apart, isolated, and having no connexion with the constitution or general system. But, on the contrary, that it is intimately connected with the rest of the economy, that it is a faithful index of the general state of health, and considered even with reference to

its preservation and beauty, is dependent upon the influence of general or systemic causes.

Thus, we find usually associated with a sound constitution, and good health, the most beautiful hair, at least that which appears in the most perfect condition. Hence the surest means of preventing alteration, or shedding, of the hair, and premature baldness, is to maintain the general health in the best possible state; to carefully avoid whatever disturbs the equilibrium, debilitates or lowers the standard of health; especially to guard against certain general causes, to be mentioned presently, which appear to have a direct and immediate influence upon the hair.

I shall now rapidly enumerate these various influences, premising that if it is not always possible to avoid them, their injurious effects may at all events be modified and counterbalanced.

It is impossible to diminish, and still more so, to remove the amount of care and anxiety which attaches to every individual through life; but we can warn a person who, still young, and, without any tangible disease, be-

gins to lose his hair, to avoid as much as possible whatever is likely to agitate the mind, late hours, too much intellectual labour, habits of solitude and indulgence of the passions.

Again, persons of a naturally delicate and feeble constitution, who in order to gratify vain desires, or from other causes, voluntarily deprive themselves of a necessary portion of their food, throw away one of the principal elements of health, and expose themselves to disease. In such cases, if the hair begins to fall, a not unfrequent occurrence, and permanent baldness is imminent, it will be proper to remind the patient of the important influence which the general condition of the system exercises upon the hair either for good or for evil; and that, with a view to the preservation of that appendage, a generous, nutritious diet must be employed, as well as those external auxiliaries, so indispensable for the maintenance of the general health—air, light, and exercise.

Besides the foregoing, experience shows us another striking circumstance connected with

this subject which will justify the preceding remarks. I allude to the evident, and frequently serious, coincidence that exists, and has existed through all time, between indulgence of the passions and baldness.

This coincidence is not only interesting from showing how profoundly the nervous system is affected by the excess alluded to, but also because it tends to establish a sort of relationship between the secretion of man and that of the hair, showing a remarkable proneness to grey hair and baldness in persons debilitated by frequent exhaustion.

This fact led several of the writers of antiquity, as Hippocrates and Aristotle, to assert that "women were exempt from baldness because they are not subject to such exhaustion." The circumstances of eunuchs generally possessing a very abundant supply of hair on the head, whilst the rest of the body is smooth and plump, and of women usually having thicker and longer hair than men, were explained by a similar hypothesis.

However, if it is not correct to state that women are exempt from baldness, it is at all

events certain, that they become bald much later in life than men. It is also well ascertained that excitement and excessive indulgence of the passions are active and manifest causes of loss of hair, and should be abandoned.

4. Considered in a general point of view, the hygiene of the hair is limited to the appreciation of certain physiological conditions, the exact value and importance of which, it is not always easy to describe. The same remark cannot be made as to the *local* influences.

It would appear at first sight that nothing is easier than to preserve the hair in good condition, and even to prevent it from falling. Nevertheless, a variety of different measures, the majority of which are positively injurious, and the remainder good in some cases, bad in others—the nature of the head-dress, the exigencies of fashion, the abuse and even the use of oils, pomades, cosmetic waters, are causes constantly operating against the healthy condition of the hair.

The hygiene of the hair ought to be con-

sidered in a double point of view, as regards the attention and management it requires.

1st. With reference to the absence of all habitual care.

2nd. With respect to the opposite condition, excess of care.

Thus, for example, we find in one case, that there are many persons who, utterly regardless of the toilette, neglect their hair, and even the common rules of cleanliness, and so allow the matter secreted by the scalp to accumulate, and remain there too long, until it becomes an irritant to the skin, causing one or other of those eruptions previously mentioned, or, as more frequently occurs, alteration of the texture of the hair, by which it loses its brilliancy and pliancy, and finally even partial or complete loss of the hair itself.

It is unnecessary to dwell on the serious inconveniences that may arise from such neglect of the ordinary duties of cleanliness; for, indeed, the whole subject of hygiene, as regards this part of the management of the hair, may be summed up in one word—cleanliness. The following simple measures, if properly

observed, are in my opinion all that are requisite on this point.

Pass a fine-tooth comb at regular intervals, every twenty-four hours, through the hair, in order to keep it from matting or entangling; separate the hairs carefully and repeatedly, so as to allow the air to pass through them for several minutes; use a brush that will serve the double purpose of cleansing the scalp and gently stimulating the hair-bulbs.

Before going to bed it will be desirable to part the hair evenly, so as to avoid false folds, or what is commonly called turning against the grain, which might even cause the hairs to break. Such are the usual and ordinary requirements as to the management of the hair.

There is, on the other hand, a class of persons who carry to excess the dressing and adornment of the hair, especially those who are gifted with hair of the finest quality. Thus, for example, females are in the habit, during the ordinary operations of the toilette, of dragging and twisting the hair, so as almost to draw the skin with it: the effect of which is, in the first instance, to break the hairs,

and fatigue the scalp, and finally to alter the bulb itself.

The fine-tooth comb is also too freely used, especially where the hair is divided, a part that the most particular attention seems to be bestowed upon. These separations, and the back of the neck whence the hair is drawn, in females, towards the crown of the head, are the parts which first show signs of decay or falling of the hair.

With these, we class the injurious effects resulting from the exigences of fashion as to the dress of the hair. As a general rule, every method which will not admit of the hair being pretty free, smooth, and raised, without being twisted, drawn, or fatigued, should be rejected, and especially those which require the intervention of artificial curling. The heat of the iron necessarily dries up the hair, renders it fragile, irritates the skin, and consequently injures the functions of the scalp.

These inconveniences become aggravated in proportion as the hair is dry and stiff, and yields with difficulty to the repeated manipulations of the toilette. It is clear that the ap-

plication of a heated iron will prove injurious according as there is want of pliancy and flexibility in the texture of the hair, because the application of heat must be longer continued.

It is indeed singular how females sacrifice at the shrine of fashion, the natural grace and attraction which an abundant supply of hair simply dressed, always possesses, and will adopt a method unsuited to the expression of the countenance, to the physiognomy, and to the hair itself. So far is this feeling of slavish subjection to the mode of the day carried, that false plats are had recourse to when necessary, the use of which are not unattended with evil results, as we shall see in a subsequent page.

An indication arises out of the preceding remarks, which however unimportant it may at first appear, is not without value.

It is this:—In a hygienic point of view, the dress of the hair best adapted for females, and especially for young girls, is that which keeps the hair slightly raised, drawn as little as possible, carefully smoothed and arranged in large bands so as to permit the air to per-

meate: to unfold it morning and evening and brush it lightly but carefully—in a word, to dress it in such a manner as will not require dragging or twisting, but leave it free. If fashion requires it to be tied and drawn, and the individual yields to the mode, it should be unfolded morning and evening, and allowed to hang loose for several minutes.

5. Whatever may be the fashion adopted for dressing the hair, it is necessary in the great majority of instances to abstain from the use of all cosmetic agents. I have known a great number of persons who preserved to a late period in life an abundant supply of hair without the aid of any other agent than the brush and comb. However, in the majority of cases it is the custom to employ cosmetics in dressing the hair, whether fashion or necessity requires them. It is by no means uncommon to find these accessories of the toilette produce the very opposite effect to that for which they were employed, and occasion diminution, deterioration, and even loss of the hair. These untoward results are in

proportion as the remedies used are inapplicable and injudicious.

For example, in some individuals the secretion which lubricates the hair, becoming, from some cause or other, deficient, the hair dries, and it appears most natural to have recourse to oily, greasy, or balsamic cosmetics alleged to be useful in some cases, and especially in this. However, a number of individuals moisten their hair with the class of agents referred to, with the view of giving it a suppleness, freshness, and brilliancy which is merely evanescent, and is even then obtained at the expense of rendering the hair drier than ever, more fragile, and finally causing it to fall.

Generally speaking, when the hair is naturally moist and oily, it is wrong to oil it habitually, and of course doubly so when it shows a tendency to dryness. I also think the habit of immersing the head in cold water every morning, so frequently practised, injurious to the hair.

The same may be said, though in a more modified sense, of the habit which women

have of incessantly moistening the bandeaus for the purpose of making the hair appear for a moment smooth and dark. Cold baths, especially salt-water baths, also exert an injurious influence upon the condition of the hair, hence it should be always carefully covered with an oil-skin cap while in the bath.

There are many persons whose hair is naturally moist and greasy, and the secretion of the scalp so abundant as to produce a layer of incrustation, which is reproduced as often as it is removed by the operation of the toilette. Notwithstanding this natural greasy condition of the hair, these very persons constantly use oil and pomatum "warranted without fail to nourish and preserve the hair!" the natural effects of which are to excite, and often to increase materially, the secretions of the scalp already unnaturally profuse, to alter the roots of the hair, to facilitate its fall, and sometimes even to occasion its complete disappearance.

However, there is a large class of persons in whom the hair does not present either extreme of dryness or of moisture, who still

employ those cosmetics which they suppose to be useful for the toilette for perfuming the hair, and preserving it in good condition. A vast number of remedies have been recommended from time immemorial to fulfil these indications, which it is needless to say they do but very imperfectly. I have no intention of enumerating them; but shall specify a few of those which experience has shown to possess some claims to attention. Thus, with a view to the preservation of the hair, pomades of beef-marrow have been recommended, and amongst them the following.

The following preparations for the hair are entirely of French origin, although several in common use in this country closely resemble them. The proportions of the ingredients will depend on the quantity of pomade, &c., required to be made.

℞ Prepared beef-marrow
Prepared lard of veal.
Balsam of Peru.
Vanilla.
Nut oil.

To be heated over a sand bath for half an hour, then strained and mixed in a mortar.

The "Huile Philocome" has also been much recommended, and is composed of:—

℞ Beef-marrow.
Oil of sweet almonds.
Nut oil.

Also the "Huile de Célèbes," composed of:—

℞ Olive oil.
Canella.
Yellow Saunders.
Oil of bergamot.

Digest the canella and the Saunders in the oil, strain, and add the bergamot.

Macassar oil, which has been extolled both as a perfume and as a preservative of the hair, is thus composed:—

℞ Ambergris.
Goose grease.
Styrax.
Milk of the cocoa.
White of eggs.
Neroli.
Oil of roses.
Balsam of Peru.

Mix, digest, and strain.

Preparations called "Bandoline," "Fixa-

ture," &c., are also much used for the purpose of rendering the hair glossy and fixing the bandeaus in the required position. The following is a specimen :—

℞ Gum tragacanth.
Distilled water.

To be allowed to digest for five or six hours, then strain through muslin, press, and add—

Alcohol.
Rose water.

Mucilage of Cydonia and eau de Cologne are also frequently employed for a similar purpose.

These applications are always useless, and frequently injurious, no matter whether the hair is naturally either dry or moist.

In the first place they prevent the scalp from being properly cleaned, and act as a foreign substance, in addition to the ordinary products of the secretions of the parts, and so, according to the nature of their composition, excite more or less irritation in the skin, and and even inflammation itself. These results almost invariably occur when rancid grease or oil are often used, and especially when cos-

metics containing active ingredients, as canilla, quinquina, are habitually employed.

In treating of the hygiene of the hair, the different kinds of coverings for the head should not be overlooked, for experience teaches that inconvenient results may arise from too heavy and too warm coverings—a superabundant perspiration, in the first instance, causing an accumulation upon the scalp of greasy matter, which becomes rancid, and occasions one or other of the eruptions peculiar to that region, ending in alopecia or loss of hair.

If the irritation fails to produce these effects, it will at least occasion an excess of the secretion of the parts, which, drying in the form of scurf, necessitates, during the operation of the toilette, the intervention of measures which tear out more or less of the hair. Independently of these mechanical causes of baldness, we may even discover the hair buried under this adhesive plaster, gradually but steadily falling off.

Although a head-dress of some kind must

be worn, the inconveniences mentioned may be avoided by females invariably adopting those of the lightest texture, and especially such as are permeable by the air. Men are more favourably circumstanced in this respect; but although they wear the hair shorter, more permeable by the air, free, and requiring less care and attention, they are still more frequently and rapidly attacked with baldness than women. This results in great measure from the general causes already mentioned; but there are also certain local influences which assist in promoting the same end.

The heavy covering for the head to which men have been doomed is an unfailing cause of injury to the hair. Even at the present day, the hat, by its weight, impermeability, and the pressure which it occasions round the head, materially assists in the premature destruction of the hair. M. Rostan entertains a similar opinion. He considers that the caloric accumulated between the hat and the surface of the head, and also the rarification of the air, which is like that of a stove, exercise an injurious influence upon the hair itself.

M. Précy, in an interesting thesis on the subject, insists upon the truth of this.

He says, that this pressure, in proportion to its force, will have the effect of interrupting the free action of the arteries, diminishing the circulation of the parts, and consequently the nutrition of the hair, which then becomes easily detached and falls. In support of this view he remarks, that valets, footmen, &c., who remain a great part of the day with the head uncovered, preserve for a long time a copious supply of thick hair, and that soldiers who are obliged constantly to wear heavy caps and helmets become very soon bald.

M. Précy also infers from the same argument, that when the hair falls in the course of severe disease, it is often owing to the circumstance of the head being kept constantly and warmly covered. Be that as it may, however, this much is at all events certain,—that in order that the hair should preserve as long as possible its natural beauty and physical health, it ought to be covered as lightly as possible, in order to allow the air to pass between the hair, and to assist the natural evaporation,

which produces sufficient moisture to keep up the glossiness and pliancy of the hair.

It is, however, necessary to guard against falling into the opposite extreme, for, if a heavy, thick, impermeable covering is injurious, to expose the head constantly uncovered, to the external atmosphere, and the vicissitudes of the seasons, would be equally so.

The nature of the covering employed has also its importance.

If a light, cool, permeable covering be what nature requires, it is evident that one composed of wool, for example, would not answer the purpose, as it would have the double inconvenience of unduly increasing the temperature, and thereby the secretions of the scalp, as well as proving injurious to the hair, directly, by the friction it must occasion.

It remains for me now to speak of certain measures in the hygiene of the hair, the exact value of which is not clearly understood, although they are constantly had recourse to for the purpose of preserving the healthy condition of that appendage, and preventing its

fall. I allude to the practice of shaving the head or cutting the hair,—practices which are generally unattended by any benefit, and if employed injudiciously or at an inopportune time, produce effects the very opposite to those for which they were intended.

When, without any appreciable morbid influence, general or local, the hair shows a tendency to fall, a very frequent occurrence, the common idea is to shave the head at once. Thus we frequently see mothers, under the impression of imaginary fear of baldness, and of the traditional prejudices of routine, sacrifice the rich and beautiful hair of their children, not only through fear of baldness, but with the mistaken idea of causing the hair to grow longer, thicker, and more abundant.

For my own part, instead of attributing to this operation the importance it is said to possess, I believe that it is never necessary except in those cases in which alopecia follows in the train of some of the severer forms of disease, not including, however, the eruptive fevers, as measles scarlatina, &c. Experience has moreover taught me, that the

action of the razor, especially when applied in young persons, only adds to the evil, by increasing the irritation on which loss of hair depends.

I entertain a proper respect for Herodotus, when he states that "those who shave the hair most frequently become bald the latest," but observation has shown me that if frequent shaving of the head caused the hair to grow thicker, it also has the effect of causing it to fall earlier and more easily.

As to the habit of cutting the hair occasionally, or "*refreshing*" it, as it is popularly styled, I have not the same objection to advance; but at the same time I cannot admit that it is an efficacious means of preventing the fall of the hair. The utility of this measure is confined within very narrow limits.

Thus, for example, every time that, without appreciable cause, constitutional disturbance, &c., the hair begins to languish and degenerate, when it is superabundant, and disproportioned to the strength of the individual, especially if young, and when the scalp has already been thinned of its covering, in such

cases the hair may be advantageously cut short. This practice is infinitely better than that of shaving the head, which I would supersede in every instance by the operation of cutting the hair close with the razor scissors.

To sum up the spirit of the preceding remarks with reference to the measures necessary for maintaining the beauty of the hair, the latter may be said to consist of, *generally*. those measures, which are likely to maintain in good condition, or to improve, the constitution ; *locally*, to strict measures of cleanliness. I think, moreover, that in a negative, but still important point of view, the local hygiene of the hair really consists in not dragging, twisting, or pulling it, and in the least possible use of cosmetics ; also in the avoidance of thick, heavy head-coverings, however agreeable they may feel.

6. In spite of the rigid observance of all the foregoing rules, it frequently happens that the hair falls and baldness even occurs, whether from age, or from other causes.

A vast multitude of cosmetics have been

recommended in every age, and warranted to repair the injurious effects of time or of disease upon the hair, and the first reflection that occurs to the reader is, that each of these individual remedies in turn has been extolled for every case of alopecia, totally regardless of the variety of causes from which it may have arisen.

As alopecia or loss of hair may arise from any one of a number of different causes, it is evident that a single remedy, in order to do good in one set of cases must necessarily do harm in others. For my own part, I have no hesitation in stating that all these cosmetics, so vaunted by advertisers for their efficacy, are every one of them dangerous, and that consequently they should be rejected in every case in which complete alopecia does not exist, including all those instances of accidental alopecia already described.

It is therefore necessary in the first instance to ascertain the source whence the loss of hair arises, whether it is the result of age, constitutional causes, or the local condition of the scalp. Owing to a want of due

consideration of these points, the hair is often permanently destroyed by the empirical and irrational application of cosmetic irritants, as cantharides, &c.

There has been, then, in every age, as before stated, a great variety of cosmetics claiming public attention, the promises of whose specific virtues were as lavish as the actual results were barren. Some of these agents, however, possessed the negative virtue of being harmless.

Since Cleopatra first employed bear's grease, an endless number of greasy substances have been extolled for producing the growth of the hair. For example, the oils of laurel, nuts, wormwood, juniper,—the fat of ducks, moles, serpents, particularly of the viper; the ashes of vine-branches, filberts, chesnuts, peach-stones, *capilli veneris*—of wasps, frogs, green lizards, cantharides, well bruised and burnt.

We find in the works of Liebaut and Guyon a number of strange compositions, one or two of which I shall give as curious specimens in their way. Liebaut prescribes in his quaint style the following:—

"Prenez chairs de limaçons, de mousches guespes, de mousches à miel, de sangsues, sel bruslé; de tous parties égales. Enfermez en un vaisseau vitré qui ait plusieurs trous au fond comme vn crible; sous ce vaisseau mettez vn autre vaisseau vitré pour receuoir l'humidité qui en découlera; amassez cette humidité et en frottez la partie; elle en sera plus excellent si vous couurez ces deux vaisseaux de fien."

This remedy was so efficacious, or at least it had the reputation of being so, that Guyon naïvely says he employed it in the case of a young man who had lost his hair at the early age of fourteen, and in whom at the expiration of three months it produced such a marvellous effect that—"les cheueux luy vindrent en quantité, fort gros, non seulement à la teste, mais aussi ailleurs, après quelques années, comme au penil, menton, &c."

Liébaut recommends the following in another part of his work:—"Prenez myrrhe, aloë, ammoniac, de chaque demi-once; cendres d'aurone, de marubium, et de racines de cannes, de chacun six drachmes; térébenthine

et poix liquide, de chacune once et demie; faictes onguent avec huyle de lentisque."

Guyon, who possessed a number of secret remedies, for example, the blessed oil of Leonardo Fioraventi; the golden draught of Fumarel, strongly recommended lizards' oil. These remedies have long since passed into disuse, but their traditionary fame still exists on the Continent, and with it flourish the fame of a host of new cosmetics warranted to do an impossibility!

Under this title may be found a long list of remedies, more or less infallible, and whose inutility is generally in proportion to their renown; but amongst the number a few may be selected to which this remark does not apply, and as those may be found useful under certain limits already stated, I shall give one or two of them here.

A "Tincture" composed of the following ingredients has been much recommended:—

℞ Laurel leaves.
Cloves.
Spirit of lavender.
Spirit of origanum

Digest over a slow fire, strain, and add sulphuric ether.

The proportion to be regulated according to the quantity required.

Lastly, and most important of all, is the following pomade :—

℞ Savon médicinal,
Cendres de cuir,
Sel gemme,
Tartre rouge,
Poudre à poudrer,
Sulfate de fer,
Sal ammoniac,
Colequinte, āā 30 grammes,
Cachou, 8 grammes.

Fates une poudre pure, et formez une pommade avec Axonge, q .s.

A silk cap may be smeared with this substance, and placed upon the head.

However ingeniously these different remedies may be combined, we must not overlook the fact that, in general, they very imperfectly fulfil the object in view ; for as Lorry has remarked, nothing is more uncommon than to find a bald head recovered with hair. Excep-

tional cases have been quoted by writers of persons far advanced in life, regaining their hair by the unaided efforts of nature.—It may be so; but for my part, I have never seen a single case of this "récapillisation."

However, with regard to the hygienic virtues of the various cosmetics, I may repeat that a great many of them, if inefficacious, will not, at least, occasion any serious local or general inconvenience. Under these conditions, then, I think that in cases where the hair begins to fall freely, and at a period of life, when it cannot be attributed to age, this morbid condition may be checked, and the maintenance of the natural covering of the scalp promoted by the judicious application of topical remedies of known utility.

I am also convinced, putting aside all illusions as to the reproduction of the hair, that we may legitimately hope, with the aid of certain cosmetics, to arrest the progress of alopecia when the follicles and bulbs are not destroyed, and carry out the object immediately under consideration, namely, to preserve as much as possible all of the hair that remains.

If a long experience has led me not to place too much reliance in cosmetics, it has also taught me that in certain cases they may accomplish the double object just stated; and especially with reference to the first of these objects, I have obtained good results from the employment of pomades composed of beef-marrow, balsam of Peru, emulsion of bitter almonds. I can also recommend the application, night and morning, of lotions of aromatic arnica, or of the following;—

℞ Tincture of the sulphate of quinine.
Tincture of cannella.

I do not wish to attribute to any of these remedies a greater value than they possess, and I would particularly warn the reader against supposing that they are unerring in their action.

For example, in cases of senile baldness it is evident that no remedy can have any beneficial effect; indeed I may sum up the result of my own experience as regards those topical remedies, which experience has shown me not

to be injurious, in the following aphorism :— generally, it is better to abstain from the employment of meaures which, under the pretext of reproducing the hair that has fallen off, may prove destructive to that which remains. It may, perhaps, be said that this is negative hygiene, but it is not the less important on that account.

7. In the investigation of those hygienic rules, having for their object the preservation of the hair, I have accomplished the most important part of the task which I have undertaken. It only remains to speak of a less serious part, perhaps, of the subject, but one nevertheless not devoid of interest. After having pointed out all that is necessary to be done, as well as avoided, with a view to the preservation of the hair, I have now to examine the results of this conservation, in relation to ornament and beauty.

The hair is one of the most important elements of that ensemble which constitutes human beauty. It is owing to the universal admission of this fact, that ingenuity has been

set to work in every age, with the view of discovering remedies capable of increasing, of even creating the constituent characters of a fine head of hair: for instance, to increase its length—to increase its thickness, its pliancy and lustre—to repair the defects of nature or of age—to remedy false direction of the hair, to alter its colour,—in short, to do all this by means of postiches.

Every one is aware of the custom of cutting the hair of young children, with the view of causing it to grow longer, thicker, and more beautiful, owing to the idea which generally prevails that the first hair is never perfect—this practice is, to say the least, useless, and is the result of prejudice and error.

The human hair ought to attain a certain length, when it will naturally cease to grow. This length, in the absence of disease, ought to be in proportion to the strength and vigour of the individual, as in a healthy tree, the branches are proportioned to the trunk, it coincides with the healthy energy of the hair bulb, and corresponds to the natural disposition of the individual; hence it may be in-

ferred that there are certain limits beyond which hair cannot grow, wherefore the custom referred to of cutting the hair cannot have the intended result, but rather retard the period when it should have attained its maximum length.

If experience has not deceived me, I do not hesitate to say, that the finest and most beautiful hair is the original, or that which was never cut. I am acquainted with a family in which there are three sisters, fair and good-looking. They have each magnificent hair, as regards brilliancy, thickness, and length. The hair of two of the girls was cut during childhood—the third still preserved her original hair, which is nevertheless the best of the three.

It appears to me that the precaution of cutting the hair is at least useless, inasmuch as it does not answer the purpose intended. If it produces any effect, it is to thicken the hair when it is lank, thin, and poor-looking. But even in this instance it is not necessary to cut it close. It will be enough to shorten it a little.

The brilliancy and pliancy of the hair depend chiefly on the state of the general health, although they are undoubtedly influenced to a certain extent by the care bestowed upon the hair itself. It would therefore appear to be out of place here to reopen that part of the subject. However, certain idiosyncrasies, and peculiarities, independently of the state of the general health, may materially affect these two essential characters of a fine head of hair.

For example, in some individuals the hair is naturally dry; the hairs break readily however slightly they may have been twisted or tightened; they take wrong directions, and, apparently, as a consequence of this tendency they split at the ends, and are constantly becoming entangled. In such cases the hair should never be cut, or even "refreshed:" for however little may be removed, the new ends will split in their turn; and if this practice is continued, the same result will invariably follow every time, until finally a perfect tonsure is established, without remedying in the least the original evil.

I may here repeat one of the rules or pre-

cepts of *negative* hygiene, not devoid of utility: viz. abstain altogether from cutting. wetting, or twisting or binding tightly, the hair.

With regard to the *positive* treatment, the hair should be slowly and carefully disentangled, and so arranged and covered at night as to give it the proper direction.

This is perhaps the only case in which it will be in accordance with rational treatment to employ greasy substances in the form of cosmetics, and pomades; and the most simple formula is the best; as the object is merely to supply the oily secretion, which in the healthy state, moistens or lubricates the hair.

It is necessary to be cautious in such cases as to the nature of the remedy selected, as the hairy scalp has a decided tendency to inflammation. For my own part, I recommend exclusively a pomade composed of—

℞ Prepared beef marrow.
Oil of bitter almonds.

Care should be taken to anoint the hairs not only in their entire length, but also at the

roots, where the hair should be divided to admit of the direct application of the ointment, and special care should be taken that the preparation does not become rancid.

On the other hand, it sometimes occurs that the hair is too greasy, loses its brilliancy and pliancy, becomes dull, matted, and dark, and disposed in lockets or bands. This greasy condition of the hair is sometimes so great, that whether it is the effect of hypersecretion of the colouring matter, or of want of cleanliness, many of the hairs become quite discoloured.

In such cases no greasy application should ever be employed. I have found it useful to powder the hair, in analogous instances, occasionally in the evening, with starch, and to brush the head carefully in the morning so as to remove the powder.

It will be also useful to cleanse the scalp now and then with a very weak alcoholic solution. It is never attended with inconvenience when used in proper cases. I have also found a solution composed of the following ingredients answer the purpose equally well :—

℞ Sub-borate of soda.
Distilled water.
Essence of vanilla.

All greasy hair requires the most minute attention to cleanliness. In some instances the hairs are misplaced, so as to take a wrong direction, whether the result of the exigencies of fashion, or of the operations of the toilette. This occurs particularly when some of the hairs exceed in length the natural limits.

The usual remedy for this inconvenience is to shave the spot where these hairs grow, which is, generally speaking, an injurious habit, inasmuch as the hair of the part shaved preserves ever afterwards a lighter or deeper tint, than that on the rest of the scalp, and is always disagreeable to the eye. The best thing that can be done in this case is to depilate the hair.

A variety of agents have been recommended to fulfil this object, but the most effectual is, without doubt, the cosmetic known under the name of *rusmæ*, and which is particularly used by the Turks. It consists of a mixture of

equal parts of sulphuret of arsenic and of lime, made into a paste with rose-water, and applied to the part for a few minutes.

8. Amongst the numerous agents employed to give artificial beauty to the hair, the dyes maintain a prominent position, in a hygienic point of view. The practice of dyeing the hair is of very ancient origin, for we find in all ages, men, who were the votaries of fashion, changing the colour of their hair; and others endeavouring to conceal the ravages of time, of mental anguish, or of disease, using cosmetics, seldom innocuous, for the same purpose.

The enchantress Medea, who possessed the power of making the old young, was probably a skilful practitioner in the art of dyeing the hair, and we have already seen that the ladies of antiquity, when fair or golden tint was the fashionable colour for the hair, used to bathe in the waters of the Crathys or of Sybaris rivers, which had the property of rendering fair or flaxen-coloured, hair of every description.

Independently of the traditions of mythology, we find that light hair was still fashionable in the middle ages, and a number of curious remedies were employed for the purpose of procuring and preserving the desired colour.

For example, crow's liver, swallow's dung, the Venetian water of Bionda, composed of the root and leaves of centaury, the Venetian alum, and soap. The buds of the black poplar, the ashes of ivy-bark, madder, pulse boiled in water containing nitre in solution, white tartar, the ashes of vine-branches, and the flowers of the *tapsus barbatus*. But the virtues of all these choice remedies have faded with the infatuation of the times in which they were invented, for light hair.

Black has also been a favourite colour in every age, and hence we find a host of remedies recommended for their unerring powers of producing this favourite hue. Indeed, at the present time it is the only colour sought for by the application of cosmetics, whether the object be to dye black a fiery red crop of hair, or to disguise the snowy streaks which time has mingled with that appendage. But

it may be stated once for all that this practice is decidedly injurious. It may fail altogether in producing the desired result; it is never unattended by a certain amount of unpleasant consequences, and frequently with evil results.

In the first place, the alteration of the abnormal colour, so far as the general aspect of the face is concerned, has an effect the very reverse of that which was intended. Every constituent part of man tends to make the human machine one harmonious whole: the figure, the stature, the skin, the hair, the gait, &c.

Fair hair is associated with a sanguineous and lymphatic temperament, a fine and white skin, blue eyes, and a soft and mild expression. Black hair, on the contrary, is generally connected with a bilious habit of body, a muscular and nervous temperament, a dark and yellowish skin, lively black eyes, and a bold, proud air. Red hair is associated with a peculiar constitution, although closely approaching to the fair type. In this variety the skin is transparent, fresh, and presents a peculiar limpidity, which belongs exclusively to the colour of hair mentioned.

To what absurd contrasts, then, are those persons not exposed, who from idle vanity attempt to break the bond of union which exists between the hair and the rest of the body? If then, from the impression that red hair is a disfigurement, it is dyed black, what relation can exist between this new colour, and the soft blue eye, and a skin so fine, and so susceptible, that the sun's rays seem to penetrate it, in the form of those lentiginous spots commonly called freckles?

It is sufficiently evident that whenever the natural colour of the hair is exchanged for an artificial one, the harmony of the expression of the countenance must be entirely destroyed, and so apparent is this, that even the least observing eye cannot fail to remark the dyed hair, in consequence of the equilibrium being destroyed between the general aspect and this alteration of colour.

These objections do not apply with equal force to those cases where the object is merely to disguise partial discolouration of the hair; but at the same time it is not always easy to produce the exact shade of the original colour,

and when the hair begins to grow this partial discolouration reappears and discloses the dye.

Finally, when this discolouration is widely diffused over the head, and requires an extensive application of the dye, in the case of an old man for example, the hair will then present a lustre, brilliancy, and tint in melancholy contradistinction with the faded and wrinkled skin, dull leaden eye, furrowed cheek, and broken and tottering gait.

Besides, experience has sufficiently established the fact, that the ingredients of which the dyes are composed, are far from being free from danger or inconvenience. The texture of the hair itself is deteriorated by them.

Composed, as they are generally, of very active remedies, they burn the hair, alter the piliferous capsule, arrest the natural secretion of the hair, and favour the production of baldness. They also frequently produce inflammation of the scalp, which terminates in one or other of the diseases mentioned in a preceding page. I have met with many cases in which females who had been in the habit of using those dyes, were reduced to the sad alter-

native of maintaining a disagreeable and painful eruption, the result of the ingredients employed, or to abandon the disguise they were intended to produce.

It may also be remarked, that the application of these agents to the head is not always easily accomplished. In short, it requires a skilful and experienced hand to apply them; but amongst the class of persons whose vanity drives them to have recourse to those preparations, how many are there not who conceal from every one else the secret of the means they adopt to make themselves look young, and many accidents occur from this concealment, as might naturally be expected. I have myself frequently seen cases in which the scalp was burned, and depilated, by the ignorant application of the dye ingredients.

In order to be convinced of the injurious effects to the hair that must inevitably follow the frequent use of those cosmetics, it is merely necessary to examine into the composition of each of the most popular of them, when we shall find that they are all, with scarcely any exception, calculated to excite, and even to

inflame, the scalp, and ultimately to deteriorate the hair itself. They ought therefore to be condemned altogether, and we should console ourselves for the loss of the temporary advantage to be derived from their use, by the reflection that every natural alteration that takes place in the external appearance of man, brings with it a certain alteration of character which is not devoid of value nor unpleasing.

Thus, for instance, hoary locks, which are considered by many as a positive disfigurement, impart to the countenance of old age that peculiar calm and serene expression which is one of the greatest charms of that period of life.

Also, red hair, so often regarded as a disfigurement, may, by the manner in which it harmonizes with the general ensemble, constitute one of the most perfect elements of beauty. But who can flatter himself to be able to cause these propositions to be generally accepted ?

Medical men have pointed out the danger inseparable from the use of cosmetics for ages, without having the effect even of diminishing,

much less of arresting their employment. At the present day, as in the times of Aspasia and Cleopatra, women especially, seek out, by every means and at any price, for remedies by which they may conceal the ravages of time upon the hair.

Since, then, we cannot hope to prohibit altogether the use of compositions for dyeing the hair, it only remains to point out those that are the least injurious, and most likely to answer the purpose sought for.

From the earliest time the following substances have been employed to blacken the hair:—the oil of cade, (κέδριον of the Greeks,) gall nuts, the lie of vine branches, preparations of lead; ravens' eggs have been extolled, probably because the colour of that bird is the most perfect black; putrified swallows, colocynth, &c. However, experience has shown that a certain number of preparations possess more or less efficacy, the principal of which I shall here point out:

℞	Quick lime exposed to the action of the air until it becomes pulverised .	2 parts.
	Carbonate of lead	1 part.

Or

Acetate of lead	2 parts.
Carbonate of lime	3 parts.
Pulverised quick lime . . .	4 parts.

Or one composed of the following ingredients:—

℞ Litharge.
Quick lime.
Starch.
Solution of potash.

Make a homogeneous powder, and preserve it in a bottle. Add a little water to one of the above-mentioned powders, so as to make a clear paste, and spread it over the hair with a fine brush. When the hair is well saturated, cover the head with a silk cap. At the expiration of four or six hours, wash the hair so as to remove the preparation employed.

The above-named ingredients yield a dark-brown colour rather than a true black.

To obtain the latter tint the preparations of silver have been specially employed. The nitrate of silver forms the base of almost all the most celebrated dyes of this kind, as the Egyptian water, the Æthiopian water, &c. The

nitrate renders the hair black by the combination of two chemical changes; the action of the air which converts the salt into the black oxide of mercury, and the action of the sulphur natural to the hair.

Preparations of silver are used in various forms; as, for example, a pomade composed of—

℞ Nitrate of silver.
Cream of tartar.
Ammoniac.
Prepared lard.

This pomade is to be applied to the hair by the aid of the brush and comb. They are also used in the form of paste:—

℞ Nitrate of silver.
Proto-nitrate of mercury.
Distilled water.

Dissolve—strain, and wash the residue with sufficient water to make a paste.

A clear paste is made of this solution, and a sufficient quantity of starch, which is then carefully applied to the hair in the evening The head is covered with a cap of gummed taffeta during the night, and the following

morning the paste is washed off, and the hair anointed with any simple ointment.

The following are liquid formulas :—

No. 1. ℞ Nitrate of silver.
Distilled water.
Suc. vert.

This is to be applied by means of a fine comb, dipped in the fluid, taking care not to touch the skin.

No. 2. ℞ Hydro-sulphate of ammonia.
Solution of potash.
Distilled water.
Mix, and direct: (Solution, No. 1.)

℞ Nitrate of siver.
Distilled water.
Mix, and direct: (Solution, No. 2.)

The solution No. 1 is to be first applied to the hair with a brush, for the space of fifteen minutes. Solution No. 2 is then to be applied with another brush, at the same time separating the hair so as to allow the liquid to reach every part.

Most of the metallic salts, especially those of lead, may be employed to dye the hair. In

order to obtain an immediate black tint, which may be done in some cases, a solution of one of the alkaline sulphates, (as the sulphates of potass, of soda, ammonia,) should be applied to the hair after the preparation of lead. When the hair is dry, oil or pomade should be applied. The continued use of a lead comb has also been recommended as a means of producing a black dye: but it is of little use.

And now let me repeat once more that all these remedies are more or less injurious to the structure of the hair. They require a certain amount of skill and dexterity in their application. If continued for a certain time they are sure to do harm both to the hair and the skin of the head, and they do not always produce the effect intended, which their vendors never fail to promise. How many dupes have not supplied themselves with specifics, at the emporiums of *Rajeunissance*, warranted to produce a beautiful black dye, whereas, to their mortification, they find that they have only transformed the original colour into a fiery red!

9. The preceding remarks naturally lead to a consideration of those artificial means adopted for replacing the hair and concealing partial or complete baldness. To replace the natural covering of the head, when denuded by age or disease false hair and scalps have been invented, for the double purpose of protecting the head from cold, and for ornament.

As the reader may imagine, I have not much to say on this topic, but still there are one or two considerations worthy of notice. Old people, who are very liable to cold from the exposure of the skin to the atmosphere; and people not so advanced in life, in whom the scalp has been suddenly and extensively deprived of its protection, from disease or otherwise, require the use of an artificial covering. This is especially the case when the hair has to be shaved, for whatever purpose.

It is then indispensably necessary to provide a substitute immediately for the natural covering. But these substitutes may sometimes produce other effects than what they were intended for. In fact, however light they may be, they are in some instances incessant

causes of irritation, and finally of destruction to the remaining portion of hair.

It is therefore well to bear in mind, especially when there is any prospect of the hair being reproduced, that they excite excessive transpiration, prevent the air from reaching the scalp, and ultimately may even profoundly alter the secretion of the hair. Also the springs with which they are supplied in order to fasten them on the head, compress the vessels, retard or arrest the circulation, and consequently the nutrition of the hair, which is finally shed, and only partially, if at all, reproduced.

On the other hand, in order to cause the partial scalps or patches to adhere to the head, recourse is had to gummy or other glutinous substances, which tear out the remaining natural hair, and aggravate the baldness which had already commenced.

It is a well-known fact that from the time when those partial scalps are worn on the crown of the head where the hair first begins to fall, the baldness which was hitherto advancing slowly and gradually, is immediately aggravated and spreads with great rapidity.

It would appear that the substance of which the artificial scalp is composed acts as a foreign body, and an irritant to the natural hair, which it finally destroys, and thus necessitates the enlargement of the false covering, from time to time, until it is large enough to cover the head.

It results from these observations, that the continued use of scalps, &c., may occasion serious inconveniences, and it is therefore necessary to state what are the conditions, if any, by which they can be obviated, or at least modified. A few words, *en résumé*, will suffice. A false scalp, whether partial or complete, should be as light as possible, made of tulle for example, that it may be easily permeated by the air, and admit of the free play of the perspiratory and circulating functions of the skin.

The use of springs should be as much as possible dispensed with, for they are always injurious, and at the risk even of not fastening them on sufficiently, glutinous or adhesive substances should be altogether rejected, which have the double disadvantage of tearing out

the natural hair, and of covering the scalp with an impermeable substance which alters or arrests the natural secretions of the skin.

Finally, they should be removed as often as convenient to allow the air to reach the head, and occasionally renewed, because the transpiratory and other matter which they collect soon become a source of irritation to the scalp.

10. To conclude. The hygiene of the hair involves two distinct kinds of precepts:—the *positive*, which embraces all the measures calculated to aid materially the preservation and embellishment of the hair—the *negative*, which involves the examination and proscription of practices which, under the pretext of utility or of ornament, may prove injurious both as regards the duration and the health of the hair and scalp. We have already passed in review these different measures, and from that exposition it results:—

1. In cases where cosmetics become necessary from fashion or defects in the hair, the simplest and most harmless are always the best.

2. Unless in rare instances, all active remedies intended to promote the growth of the hair should be avoided.

3. All the preparations used for dyeing the hair are without exception bad, and it would therefore be more prudent to bear with a minor annoyance than run the risk of greater evils, which may follow the employment of pernicious cosmetics.

4. Lastly. The hygienic treatment of the hair consists in assiduous but properly regulated attention to cleanliness of that appendage and of the scalp, constant and careful attention in the ordinary daily management of the hair, in the prudent employment of rational cosmetics, in the strict observance of a precept, which applies to everything connected with the management of the human frame,—Always follow and assist Nature in her operations, never force or thwart her.

THE END.

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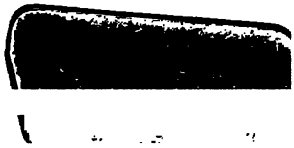
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